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ABSTRACT

Since 1989, the North Central Association has required accredited institutions to develop programs that assess student academic achievement and reemphasized the role of general education (GE) as a central requirement for degree programs. At Wisconsin's Madison Area Technical College (MATC), these requirements presented four related challenges: dealing with a mission statement that emphasizes employment and technical training; uncertainty over how to add GE components to existing, course-heavy occupational programs; a lack of consensus on the content and delivery of GE in technical programs; and the perception that the assessment initiative intruded on academic freedom. To respond to these challenges, MATC formed two faculty committees to identify a set of core GE abilities and related indicators and apply the abilities to the college's transfer program, respectively. These two committees were then joined to pilot the new abilities and indicators in six programs. In undertaking this initiative, MATC sought to build upon established assessment practices, rather than start from zero; identify supporters of the initiative early on at the administrative, faculty, and staff levels; legitimize the value of faculty dialogue; develop a college-wide assessment communication plan; and establish an adequate budget. An organizational chart of the initiative, lists of committee responsibilities and planning guidelines, sample course analysis forms, the eight core abilities developed, a chart of six levels of assessment activities, and an implementation timeline are attached. (BCY)

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Measuring Moving Targets: Assessing General Education and Program Outcomes Across the Curriculum

Francesca Piuma
Catherine Wilson

Madison Area Technical College

Paper presented at the Annual Meeting of the North Central Association Commission on Schools (Tempe, AZ, April 6-9, 1997)

JC 970 391

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Measuring Moving Targets:

Assessing General Education Across the Curriculum of a Two-Year Technical College

Francesca Piuma
Catherine Wilson

The College

Madison Area Technical College (MATC) is a two-year institution that confers associate degrees, diplomas, and certificates in technical areas and associate degrees in Arts and Sciences. Located in South Central Wisconsin, MATC has campuses in Madison, Fort Atkinson, Portage, Reedsburg, and Watertown. The college has provided technical training and adult education to community members since 1912. In 1966, the state authorized MATC to offer a college transfer program for students interested in acquiring transferable credits to four-year institutions. Currently, technical, general education, alternative learning, and avocational courses at MATC serve a student population of 47,783 across the five campuses.

The Challenge: General Education and Student Assessment as Moving Targets

In October 1989, North Central Association (NCA) began requiring all its affiliated institutions to develop programs that assess student academic achievement. More recently, NCA affirmed its commitment to student assessment by embedding this requirement into its Criteria for Accreditation. During this same period, the Commission also reemphasized the role of general education as a central requirement (GIR #16) for all undergraduate degree programs.

Both the assessment initiative and the Commission's growing concerns with the centrality of general education as an indicator of higher education pose challenges for a number of two-year technical colleges. For MATC, the challenge was initiated by NCA's request for a student assessment plan that assesses and demonstrates the centrality of general education in all two-year degree and diploma programs. Although our diploma and degree programs require general education courses and conduct a range of student assessments, NCA's request presented four related moving targets for our institution:

1. MATC's mission statement places a primary focus on employment and technical training;

2. The administration and faculty were unclear how to translate the centrality of general education into the current delivery of educational services, particularly if the directive required the addition of general education courses to our already course-intensive occupational programs;

3. The college lacked internal consensus on the required content and delivery of general education to students in technical programs;

4. A number of faculty perceived the assessment initiative as a potential intrusion to their academic freedom.

Response to the Challenge (Opportunity)

To begin, a number of our administrators met with NCA staff to obtain clarification and suggestions regarding their request. In addition, we sought advice from other technical colleges who were demonstrating success in their general education and assessment efforts. This information was brought back to MATC and discussed at all levels of the college. The result was a conscious decision to translate an institutional challenge into an opportunity to make positive curricular and assessment changes responding to the needs of our students and their future employers.

The administration and faculty approached this new opportunity by establishing and supporting three faculty committees for identifying, describing, and assessing a core general education curriculum. The goal of the effort was to develop a college-wide initiative that ensures:

- The administration and assessment of a general education core curriculum that is central and common to all 57 two-year associate degree and diploma programs;

- The development of a general education core curriculum and an assessment plan that are faculty developed and owned.

The first committee was charged to clarify a set of general education core abilities and identify indicators to be used as standards for their assessment. Faculty in the second committee focused on applying the core abilities and indicators to the college transfer program in Liberal Arts.

Once the core abilities and indicators were refined, verified, and field-tested, the two committees were consolidated into an Assessment Implementation Team (AIT). This group is charged with piloting the core abilities/indicators and gathering assessment data in six programs during the 1996-1997 academic year. At the end of the pilot year, AIT will implement a five-year plan to phase-in the core abilities, indicators, and assessment strategies across the remaining 51 two-year associate degree and diploma programs.

To date (Spring, 1997), the outcomes and products resulting from the three faculty groups include:

- The decision to infuse the core abilities into general education and program content rather than requiring a set of additional general education courses;
- The development of eight general education core abilities and measurable indicators;
- Approval of the eight general education core abilities and measurable indicators by the college's Instructional Services Division as universal standards for all two-year associate degree and diploma programs;
- A student-focused core ability philosophy statement that supports life-long learning by providing students with the opportunity to move as far as their talents and preparation can take them;

- A course-level matrix (Course Analysis Form) that documents where core ability indicators are taught, the level of curricular emphasis given to each indicator, and how the indicator is assessed;
- A program level-format that maps course-level information onto a Program Core Ability Matrix;
- A plan to provide technological support for the collection, input, and analysis of core ability and assessment data at course, program, and institutional levels;
- Administrators, faculty, and staff working in a coordinated effort to develop and implement a general education core curriculum and student assessment initiative within a large and diverse two-year technical college.

Critical Processes Used to Guide MATC's Assessment Initiative

The rapid evolution and success of our efforts can be attributed to the coordination of administrators, faculty, and staff and their support of a series of effective processes that serve as guidelines for our work. Due to the positive impact of these processes, their description and application may be of particular value to similar technical colleges.

Avoid Ground Zero Thinking

Build the foundation of your plan on established assessment practices and general education curriculum within the institution. Undoubtedly there are numerous curricular innovations and related activities being conducted within your college. Identifying faculty, administrators, and staff involved in related activities acknowledges their work, assists in locating a foundation for your future efforts, and locates internal experts who can support and contribute to the college's development of a core general education curriculum and assessment plan.

There are very few new ideas! As much as each college is unique, the likely solution to your general education and student assessment needs will be found in old and borrowed practices. Due to declining funds for higher education and the time limitations of faculty and administrators, limited resources can be maximized by identifying similar institutions who have model general education and assessment programs. Borrow their model and utilize personnel from their institution as consultants to explain their approach. Innovation and motivation will evolve when faculty and administrators begin to adapt the model to the unique qualities and challenges faced by your college.

Identify Champions

General education core curriculum development and assessment must have some initial support at administrative, operational, and faculty levels of the college if there is to be any advancement of the initiative. Widespread support for assessment or the centrality of general education in existing curriculum takes time. Therefore, until a "bandwagon" is legitimized, it is critical to have champions at each level of the institution who will work toward advancing the effort.

Champions must be given the opportunity to meet regularly, discuss critical issues, agree upon common goals, share a common language, and identify

specific activities to advance the initiative. To avoid "burn-out" champions will also need to build supportive constituencies. These constituencies will eventually be responsible for implementing and fine tuning the new general education practices and assessment strategies.

Legitimize the Value of Faculty Dialogue

Faculty are essential to the development of a general education core curriculum and student assessment plan. Concomitantly, their contractual role is to provide quality instruction that maximizes student learning for a specified number of courses (MATC's teaching load is four or five classes/semester). Therefore, the role of developer and teacher can quickly be at odds if a variety of mechanisms are not provided to support faculty to engage in structured and serious dialogue over an extended period of time. Specific meeting strategies are also valuable to efficiently use faculty time and legitimize the importance of their dialogue, particularly between general education and technical program instructors. Supports and strategies used by MATC include the following:

- Committee members are selected with diverse opinions and a commitment to completing the general education and assessment objectives according to agreed upon timelines;
- Faculty from the major instructional divisions of the college are represented on each committee;
- A faculty member is selected to facilitate or chair each committee;
- An administrator is designated to attend committee meetings, provide support, and serve as a conduit between the committee and related administrative functions of the college;
- Committees agree upon a set of objectives and a timeline for their work;
- A variety of mechanisms are engaged to provide faculty time and incentive to participate in committee activities (release time, stipends, etc.);
- Agendas are developed and sent to all committee members prior to each meeting;
- A regular meeting schedule is identified for each semester that facilitates faculty attendance and participation;
- A secretary is selected from clerical support services to arrange for meetings, take and disseminate minutes, disseminate reports, develop data formats, type memos, and respond to the information needs of committee members.

Develop a College-wide Assessment Communication Plan (Marketing Assessment)

The activities and outcomes evolving from general education core curriculum and assessment development need to be marketed to administrators, faculty, and staff of the college. Avoid being viewed as the "flavor of the month" by periodically updating your college community on the developments and progress of your committee's activities.

Communication can take the form of flyers, quick up-date presentations at department or division meetings, collegial discussions, brown-bag lunches and more formal presentations at college-wide events, inservice days, and board

meetings. The goal of a communication plan should be to "leave no rock unturned."

Your communication (marketing) plan must be ongoing. Do not assume that one flyer or a series of presentations will inform everyone. Awareness of the initiative will be promoted through repeated efforts over time.

Budget for General Education Core Development and Assessment

Curriculum development and student assessment in general education core areas require resources and, initially, these resources may need to be extensive. During a time when most colleges are experiencing dramatic cut-backs, curriculum development and assessment initiatives may be viewed as nice but not critical to the functioning of the institution's day-to-day operations. Therefore, core ability and assessment activities must be communicated as methods to demonstrate accountability to the college's internal and external (taxpayer) public. Communicating how tax dollars are an investment in the community rather than a cost to the taxpayer can be a very powerful argument in support of most core ability and assessment initiatives.

Obtaining the necessary resource dollars to support the development of a general education core and assessment plan will require college committees to be sensitive to internal budgeting and reporting requirements. Although budgeting and planning cycles always appear to come at the worse time, being aware of the appropriate budgeting forms, providing clear rationales for your requests, and submitting all the necessary forms on the appropriate due dates will be critical to obtaining funding.

As you begin your general education core development and assessment activities, do not be alarmed if funds have to be patched together until the next budgeting cycle. Initially, finding funds may have to be the responsibility of both the administrators and faculty members of your committees. Funds to support faculty release and stipends can sometimes be found in instruction, curriculum development, or staff development budgets. To facilitate a more stable funding base in the future, document your activities and accomplishments. Be bold in communicating your successes and products to your college's decision makers.

Summary

The fast moving targets of general education and assessment can appear daunting, particularly for institutions focused on employment and technical training outcomes for their students. Fortunately, our institution chose to look at the substance of these issues and their impact on our students' ability to be lifelong learners into the 21st century. Through the cooperation of our administration, faculty, and staff, these targets became opportunities to transform MATC. Provided with the necessary support and trust on the front-end, teams of faculty, administrators, and staff were given the time and resources to engage in positive dialogue. The result is an infrastructure that stabilizes institutional change so that meaningful innovation in teaching and learning can be developed, implemented, assessed, and fed back so improvements can be made.

Madison Area Technical College (MATC) Madison, Wisconsin

1997 NCA Annual Meeting

Assessing General Education and Program Outcomes Across the Curriculum

Presenters:
Dr. Cesca Piuma, Coordinator of Institutional Effectiveness
Ms. Catherine Wilson, Instructor/Occupational Therapy Assistant
Mr. James Miller, Instructor/Automotive
Ms. Laurie Fitzgerald, Instructor/English

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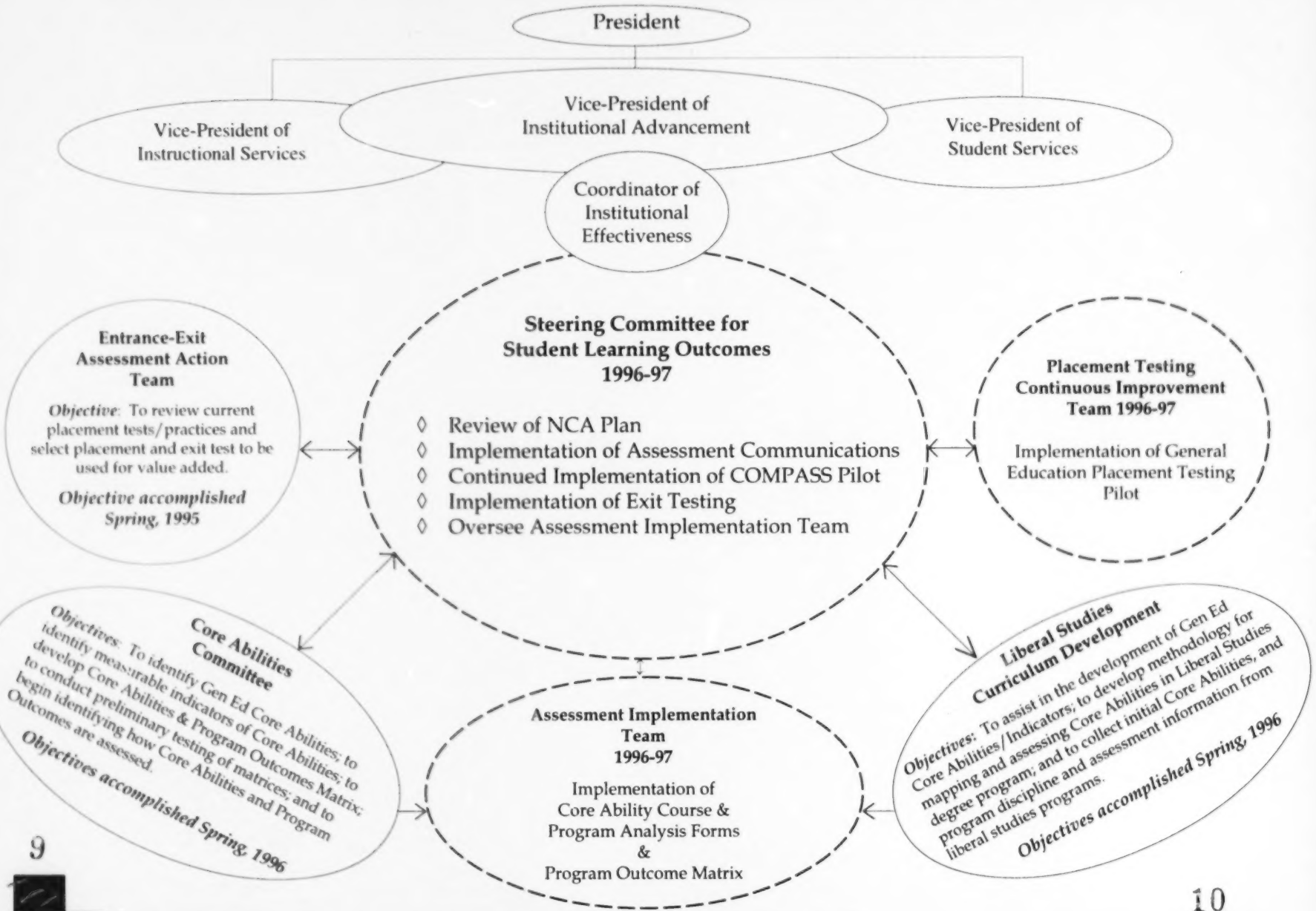
Organizational Structure Supporting the Revised Plan for Assessing Student Learning Outcomes


President
Vice-President of Instructional Services
Vice-President of Institutional Advancement
Vice-President of Student Services
Coordinator of Institutional Effectiveness
Steering Committee for Student Learning Outcomes 1996-97
◊ Review of NCA Plan
◊ Implementation of Assessment Communications
◊ Continued Implementation of COMPASS Pilot
◊ Implementation of Exit Testing
◊ Oversee Assessment Implementation Team
Entrance-Exit Assessment Action Team
Objective: To review current placement tests/practices and select placement and exit test to be used for value added.
Objective accomplished Spring, 1995
Placement Testing Continuous Improvement Team 1996-97
Implementation of General Education Placement Testing Pilot
Core Abilities Committee
Objectives: To identify Gen Ed Core Abilities; to identify measurable indicators of Core Abilities; to develop Core Abilities & Program Outcomes Matrix; to conduct preliminary testing of matrices; and to begin identifying how Core Abilities and Program Outcomes are assessed.
Objectives accomplished Spring, 1996
Assessment Implementation Team 1996-97
Implementation of Core Ability Course & Program Analysis Forms & Program Outcome Matrix
Liberal Studies Curriculum Development
Objectives: To assist in the development of Gen Ed Core Abilities/Indicators; to develop methodology for mapping and assessing Core Abilities in Liberal Studies degree program; and to collect initial Core Abilities, and program discipline and assessment information from liberal studies programs.
Objectives accomplished Spring, 1996

Assessment Implementation Team (AIT)

1996-1997 Objectives
for the Core Abilities and Program Outcomes Pilot

1. To map the core abilities (in terms of their indicators) and program outcomes for at least six occupational programs.

2. To map the core abilities/indicators in selected liberal studies program courses.

3. To map the core abilities/indicators in selected general education courses.

4. To identify existing and needed strategies for assessing core abilities/indicators. Activities may include:

    - Identification of program assessment used at the end of the program/ course sequence (summative assessment).

    - Documentation about the types of assessment used at course level (formative and/or summative assessment).

    - Identification of needs for staff development in the area of course and program level assessment.

5. To evaluate core ability and program outcome matrices and modify.

6. To provide information about and evaluate processes used to map and assess core abilities and program outcomes.

7. To develop a five-year plan (1997-2002) for the phase-in of matrices and assessment strategies across the institution.

Beginning the Core Ability Assessment Process (Front-end Principles)

1. Clearly identify the committee's objectives and timeline.

2. Identify roles and responsibilities of committee members.

3. Select committee members who:
   - represent stakeholder groups
   - support assessment efforts
   - represent differing opinions
   - have the respect of their colleagues

4. Utilize a participating faculty member to chair or facilitate the group. (This person must have good facilitation skills and be respected by the committee's membership.)

5. Provide release time or other available options to allow faculty the necessary time to think, discuss, and problem solve on a regular basis.

6. Provide the committee with support staff to take and disseminate meeting minutes, schedule meetings, and respond to the clerical and resource needs of committee members.

7. Identify an administrative position to work with committee, ensure activities are moving according to the identified timeline, and to serve as conduit between the committee and the administrative structure of the institution.

8. Capitalize on existing models that address the stated objectives.

9. Develop and implement a communication plan that regularly informs the college community of the committee's activities.

10. Allow faculty to serve as the vehicle to disseminate information about the group's activities back to their respective divisions/programs.

Directions for Filling out the Course Analysis Form

07/01/97

MATC Madison Area Technical College

Hello! Thank you for helping us determine and document the **Core Abilities** related to general education that are *CURRENTLY* being learned by students in your course. We ask each instructor, or team of instructors who teach the same course, to fill out this form. Whether you work on the form individually or as a team, the ultimate goal is to have one Course Analysis Form for each course, which will feed into full program matrices.

This form will help us identify where the eight institutional core abilities are being developed at MATC. It will help us communicate with each other and to coordinate curriculum to meet the needs of our students.

If you have any questions as you begin to fill the matrix out, please do not hesitate to contact one of the Assessment Implementation Team members (see back side for names/phone numbers.) ***After you complete the Course Analysis Form, please make a photocopy of the form and keep the photocopy of the form with the course outline for the course.***

The steps listed below will help you fill out the attached COURSE ANALYSIS FORM
(Please use a #2 pencil when filling out this form.)

1. With your *CURRENT* course outline in hand, carefully read each core ability (1-8) and indicators underneath (1.1, 1.2 ...) located on the far left and decide on the extent that you *currently* emphasize these in the course.

2. DOCUMENTED IN COURSE OUTLINE Fill in if the core ability/indicator is documented by competencies/objectives in the course outline.

3. HOW DO YOU ASSESS Fill in all the appropriate methods which best describes what *you* currently use to assess the core ability indicators in your class. Please note there is a space to write in other assessment techniques not indicated on the form. Remember only the number of assessments count, not type.

4. EMPHASIS Fill in the degree of emphasis (major, secondary, no) you place on each of the listed core ability indicators. These abilities fall under broader categories, which are underlined (communicate, critical thinking, ethics, etc.) *The emphasis you choose should correspond with your choices in 2 and 3 (above).*

   There is a Major Emphasis if BOTH of the following are true about the core ability indicator:
   - It is documented by competencies/objectives in your *CURRENT* course outline, and
   - It is assessed with multiple and/or varied assessments

   There is a Minor Emphasis if the core ability indicator is assessed in at least one way and ONE of the following is true:
   - It is documented as a secondary objective, or
   - It exists, but is not explicitly documented in objectives

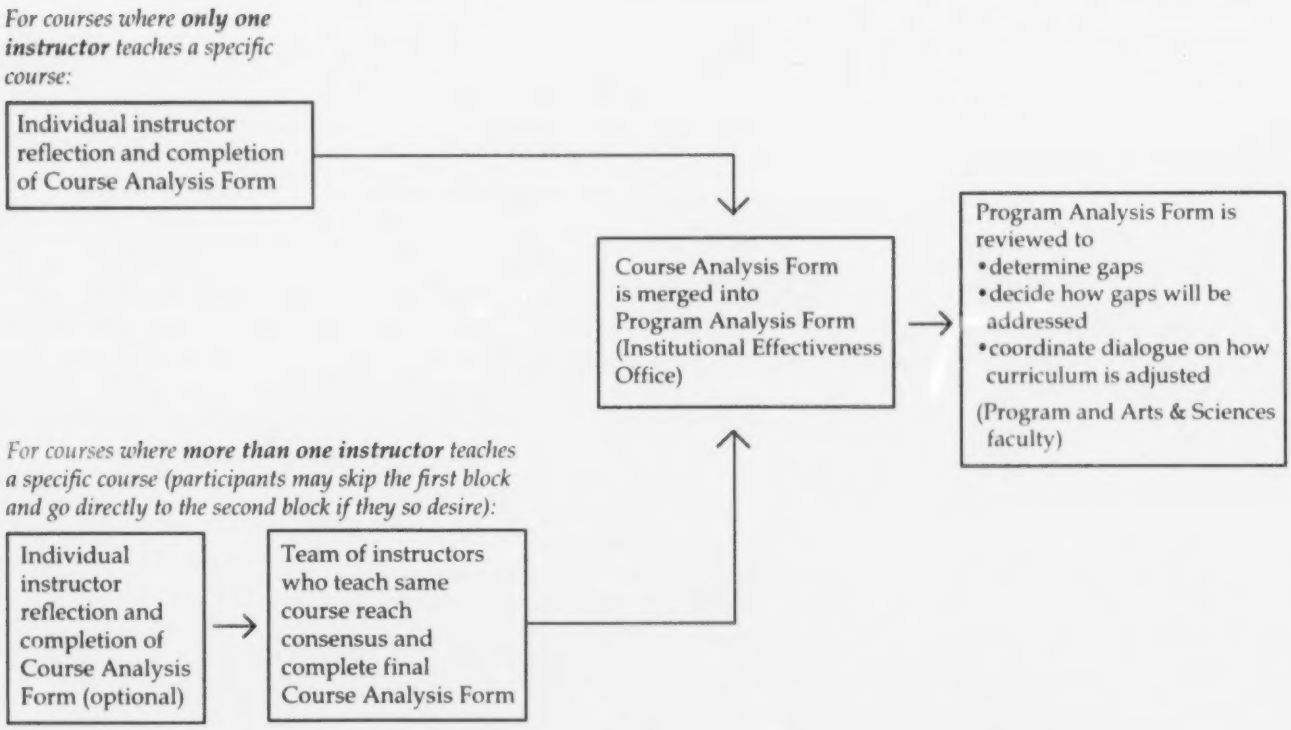
   There is No Emphasis if an indicator is covered incidentally or not at all

5. FOLLOW-UP NEEDED? This column is for your personal use only. Fill in if you would like to remind yourself to go back and re-look at this indicator.

Things to think about:

1) Please be sure you are able to substantiate your decision with documentation in your course outline and specific assessments.
2) Remember these are core abilities for the institution and any given core ability may be developed to a greater extent in another course and need not be a major emphasis in your course.
3) If you have filled out 80% of the Core Ability indicators as major emphasis — alert — You may want to recheck your markings. This implies that you are specifically teaching and assessing all the skills marked.

Flow of Information


For courses where only one instructor teaches a specific course:
Individual instructor reflection and completion of Course Analysis Form
Course Analysis Form is merged into Program Analysis Form (Institutional Effectiveness Office)
Program Analysis Form is reviewed to
•determine gaps
•decide how gaps will be addressed
•coordinate dialogue on how curriculum is adjusted
(Program and Arts & Sciences faculty)
For courses where more than one instructor teaches a specific course (participants may skip the first block and go directly to the second block if they so desire):
Individual instructor reflection and completion of Course Analysis Form (optional)
Team of instructors who teach same course reach consensus and complete final Course Analysis Form

Assessment Implementation Team (AIT) Members

Karen Anderson (Arts & Sciences/Science) 6496
Laurie Fitzgerald (Arts & Sciences/English) 6617
Ed Hellegers (Arts & Sciences/Social Science) 6522
Steve Hill (AATI/Machine Tool) 6825
Cauline Howell (Alternative Learning) 2433
Al Lehnen (Arts & Sciences/Math) 6567
Jim Miller (AATI/Automotive) 6815
Juan Morales (Student Services) 6563
Charlene Ohnstad (BAAD/Office Tech) 6595
Cesca Piuma (Institutional Effectiveness) 2940
Paula Suominen (BAAD/Office Tech) 6697
Linda Thompson (HHPS/Respiratory Therapy) 6525
Gerri Wicklund (BAAD/Bus Open Lab) 6336
Catherine Wilson (HHPS/OTA) 2313

COURSE ANALYSIS FORM

Please use a #2 pencil when filling out this form.

PROGRAM TITLE:
COURSE TITLE AND NUMBER:
Completed by:
Date Completed:

Institutional Core Abilities Outcomes

	Documented in Course Outline (Fill in if applicable)	How Do You Assess (Fill in all that apply)															Emphasis (Fill in one)			
		Attendance	Class Discussion	Portfolio	Project	Paper/Report (written)	Presentation (oral, visual)	Work Performance (internships, clinical, affiliations, field work)	Lab	Test/Quiz (quizzes, tests, midterm, exams)	Comprehensive Exam (final, cumulative, certification)	Peer Evaluation	Self Evaluation	Homework	Other Assessment		Major Emphasis	Minor Emphasis	No Emphasis	Follow-up Needed?
1. Students are learning to communicate effectively when they:																				
1.1 Read, retain, restate, and apply ideas for a variety of purposes including information, enjoyment, and appreciation	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
1.2 Write clearly, concisely, and accurately in a variety of contexts and formats	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
1.3 Speak clearly, concisely, and accurately in a variety of contexts and formats	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
1.4 Demonstrate active listening skills	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2. Students are developing critical thinking when they use multiple perspectives to:																				
2.1 Demonstrate observation skills	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.2 Identify a problem to be solved, task to be performed, or decision to be made	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.3 Gather appropriate information from multiple sources	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.4 Evaluate information	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.5 Make inferences and connections	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.6 Identify criteria to evaluate the solution, process, or decision	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.7 Formulate alternative solutions, processes, or decisions and identify potential consequences	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
2.8 Select an appropriate solution, process, or decision	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
3. Students are developing a sense of personal, social, professional, and work ethics when they:																				
3.1 Accept responsibility for their own actions	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
3.2 Demonstrate respect for the rights, views, and work of others	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
3.3 Exhibit personal, professional, and academic honesty	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
3.4 Recognize their responsibility to personal, social, professional, educational, and natural environments and make informed decisions based on that responsibility	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
3.5 Display behavior consistent with the ethical standards within a discipline or profession	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
4. Students are developing global awareness when they:																				
4.1 Express an understanding of the interconnections and interactions among people and systems (political, economic, social, and natural) and the necessity of balancing human needs with the limitations of world resources	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
4.2 Accumulate knowledge of and experience with people in their own and other cultures, past and present, and how they live, think, communicate, and view the world	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
4.3 Describe the impact of the global economy on life, work, and opportunities	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
4.4 Recognize the commonality of human experiences across cultures	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○
4.5 Recognize the influence of diverse cultural perspectives on human thought and behavior	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	○	○

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COURSE ANALYSIS FORM

Please use a #2 pencil when filling out this form.

PROGRAM TITLE: **COURSE TITLE AND NUMBER:** **Completed by:** **Date Completed:** **Institutional Core Abilities Outcomes**	Documented in Course Outline (Fill in if applicable)	How Do You Assess (Fill in all that apply)														Emphasis (Fill in one)			Follow-up Needed?
		Attendance	Class Discussion	Portfolio	Project	Paper/Report (written)	Presentation (oral, visual)	Work Performance (internships, clinical, affiliations, field work)	Lab	Test/Quiz (quizzes, tests, midterm, exams)	Comprehensive Exam (final, cumulative, certification)	Peer Evaluation	Self Evaluation	Homework	Other Assessment	Major Emphasis	Minor Emphasis	No Emphasis	
5. Students are learning to use mathematics effectively when they:																			
5.1 Perform computations using appropriate methods	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
5.2 Demonstrate knowledge and application of measurement	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
5.3 Read, interpret, and generate graphical information	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
5.4 Demonstrate knowledge and application of formulas	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
5.5 Use critical thinking skills in a mathematical context	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
6. Students are learning to use science and technology when they:																			
6.1 Use scientific principles appropriately in problem-solving and decision-making	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
6.2 Apply the scientific method by organizing, analyzing, and interpreting data appropriately	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
6.3 Use appropriate scientific equipment, methods, and safety precautions	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
6.4 Describe the changing nature of and the interaction among science, technology, and society	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
6.5 Use critical thinking skills to approach and use new technology	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
6.6 Use appropriate technology to manage information, solve problems, communicate, develop products, and provide services	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
7. Students are developing self-awareness when they:																			
7.1 Recognize their own self-worth, strengths and weaknesses, and potential for growth	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
7.2 Recognize their own biases and values	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
7.3 Demonstrate the ability to give and receive constructive feedback	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
7.4 Develop time and stress management skills	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
7.5 Set goals and devise strategies for educational, personal, and professional development in a changing world, consistent with their abilities and circumstances	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
8. Students are learning effective social interaction when they:																			
8.1 Behave appropriately in a variety of situations, circumstances, and roles	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
8.2 Work effectively in pairs and small and large groups	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
8.3 Demonstrate awareness of and respect for differences	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○
8.4 Recognize conflict and use conflict resolution skills when appropriate	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○	○	○	○

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CORE ABILITIES

1. COMMUNICATIONS

Students are learning to communicate effectively when they:

1.1 Read, retain, restate, and apply ideas for a variety of purposes including information, enjoyment, and appreciation
1.2 Write clearly, concisely, and accurately in a variety of contexts and formats
1.3 Speak clearly, concisely, and accurately in a variety of contexts and formats
1.4 Demonstrate active listening skills

2. CRITICAL THINKING

Students are developing critical thinking when they use multiple perspectives to:

2.1 Demonstrate observation skills
2.2 Identify a problem to be solved, task to be performed, or decision to be made
2.3 Gather appropriate information from multiple sources
2.4 Evaluate information
2.5 Make inferences and connections
2.6 Identify criteria to evaluate the solution, process, or decision
2.7 Formulate alternative solutions, processes, or decisions and identify potential consequences
2.8 Select an appropriate solution, process, or decision

3. ETHICS

Students are developing a sense of personal, social, professional, and work ethics when they:

3.1 Accept responsibility for their own actions
3.2 Demonstrate respect for the rights, views, and work of others
3.3 Exhibit personal, professional, and academic honesty
3.4 Recognize their responsibility to personal, social, professional, educational, and natural environments and make informed decisions based on that responsibility
3.5 Display behavior consistent with the ethical standards within a discipline or profession

4. GLOBAL AWARENESS

Students are developing global awareness when they:

4.1 Express an understanding of the interconnections and interactions among people and systems (political, economic, social, and natural) and the necessity of balancing human needs with the limitations of world resources
4.2 Accumulate knowledge of and experience with people in their own and other cultures, past and present, and how they live, think, communicate, and view the world
4.3 Describe the impact of the global economy on life, work, and opportunities
4.4 Recognize the commonality of human experiences across cultures
4.5 Recognize the influence of diverse cultural perspectives on human thought and behavior

5. MATHEMATICS

Students are learning to use mathematics effectively when they:

5.1 Perform computations using appropriate methods
5.2 Demonstrate knowledge and application of measurement
5.3 Read, interpret, and generate graphical information
5.4 Demonstrate knowledge and application of formulas
5.5 Use critical thinking skills in a mathematical context

6. SCIENCE AND TECHNOLOGY

Students are learning to use science and technology when they:

6.1 Use scientific principles appropriately in problem-solving and decision-making
6.2 Apply the scientific method by organizing, analyzing, and interpreting data appropriately
6.3 Use appropriate scientific equipment, methods, and safety precautions
6.4 Describe the changing nature of and the interaction among science, technology, and society
6.5 Use critical thinking skills to approach and use new technology
6.6 Use appropriate technology to manage information, solve problems, communicate, develop products, and provide services

7. SELF-AWARENESS

Students are developing self-awareness when they:

7.1 Recognize their own self-worth, strengths and weaknesses, and potential for growth
7.2 Recognize their own biases and values
7.3 Demonstrate the ability to give and receive constructive feedback
7.4 Develop time and stress management skills
7.5 Set goals and devise strategies for educational, personal, and professional development in a changing world, consistent with their abilities and circumstances

8. SOCIAL INTERACTION

Students are learning effective social interaction when they:

8.1 Behave appropriately in a variety of situations, circumstances, and roles
8.2 Work effectively in pairs and small and large groups
8.3 Demonstrate awareness of and respect for differences
8.4 Recognize conflict and use conflict resolution skills when appropriate

For further information, please contact Cesca Piuma, Coordinator of Institutional Effectiveness, 259-2940.

Institutional Core Abilities Outcomes

AUTOMOTIVE TECHNOLOGY
10-602-3

Core Abilities are the eight general standards that serve as the foundation for education at MATC

	Service Repair Procedures 603-102	Combust Control Systems 602-156	Drive & Fuel Systems 602-166	Industrial Mathematics 1 804-141	Communication Skills 1 801-151	Tech Briefs/Sheet Systems 602-157	Vehicle Susps & Align 602-163	Industrial Mathematics 2 804-142	Basic Computer Math 804-171	Technical Science 1-5 806-141	Economics 809-195	Power Trans. Systems 602-153	Fluid Power Transmission 602-154	Technical Science 2-5 806-142	Psych of Human Rel. 809-199	Contemp Amer Society 809-197	Auto Accessories 602-162	Intern. Combust. Engines 602-150	Comp. Engine Controls 602-153	Service Management 602-158	Technical Reporting 801-197	Elective
1. Students are learning to communicate effectively when they:																						
1.1 Read, retain, restate, and apply ideas for a variety of purposes including information, enjoyment, and appreciation	2	2	2	1	2	2	2	1	1	1	2	1	2	1	2	2	2	2	2	2	2	
1.2 Write clearly, concisely, and accurately in a variety of contexts and formats	2	2	2	0	2	2	2	0	1	1	2	2	2	0	1	2	2	2	2	2	2	
1.3 Speak clearly, concisely, and accurately in a variety of contexts and formats	2	2	2	0	1	2	2	0	0	0	1	1	1	0	2	1	1	2	2	2	2	
1.4 Demonstrate active listening skills	2	2	2	1	1	2	2	1	1	1	2	1	2	1	1	1	2	2	2	2	2	
2. Students are developing critical thinking when they use multiple perspectives to:																						
2.1 Demonstrate observation skills	2	2	0	1	2	2	2	1	0	1	2	2	2	1	1	1	2	2	0	1	2	
2.2 Identify a problem to be solved, task to be performed, or decision to be made	2	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	1	2	
2.3 Gather appropriate information from multiple sources	2	2	1	1	2	2	2	1	1	2	2	2	2	2	1	1	2	2	2	2	2	
2.4 Evaluate information	2	2	2	0	2	2	2	0	0	1	2	2	2	1	1	2	2	2	2	2	2	
2.5 Make inferences and connections	2	2	1	2	2	2	2	2	0	2	2	2	2	2	1	2	2	2	1	1	2	
2.6 Identify criteria to evaluate the solution, process, or decision	2	2	2	1	2	2	2	1	0	0	1	2	2	1	2	2	2	2	2	2	2	
2.7 Formulate alternative solutions, processes, or decisions and identify potential consequences	2	2	2	1	2	2	2	1	0	1	2	2	2	0	2	2	2	2	2	2	2	
2.8 Select an appropriate solution, process, or decision	2	2	1	2	2	2	2	2	0	2	1	2	2	2	2	2	2	2	1	2	2	
3. Students are developing a sense of personal, social, professional, and work ethics when they:																						
3.1 Accept responsibility for their own actions	1	2	0	1	1	2	2	1	1	1	1	2	2	1	2	1	1	2	0	1	2	
3.2 Demonstrate respect for the rights, views, and work of others	1	2	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	2	1	2	2	
3.3 Exhibit personal, professional, and academic honesty	1	2	2	1	1	2	2	1	1	1	1	1	1	1	2	1	2	2	2	1	2	
3.4 Recognize their responsibility to personal, social, professional, educational, and natural environments and make informed decisions based on that responsibility	1	2	0	0	0	1	2	0	0	1	1	1	1	0	0	2	1	1	0	1	1	
3.5 Display behavior consistent with the ethical standards within a discipline or profession	1	2	0	0	0	2	2	0	0	0	0	1	1	0	0	0	2	2	0	0	2	
4. Students are developing global awareness when they:																						
4.1 Express an understanding of the interconnections and interactions among people and systems (political, economic, social, and natural) and the necessity of balancing human needs with the limitations of world resources	1	2	0	0	0	1	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	
4.2 Accumulate knowledge of and experience with people in their own and other cultures, past and present, and how they live, think, communicate, and view the world	1	2	0	0	1	1	2	0	0	1	1	0	0	1	1	2	0	0	0	1	1	
4.3 Describe the impact of the global economy on life, work, and opportunities	1	2	0	0	0	2	2	0	0	0	2	1	0	0	1	2	0	0	0	1	1	
4.4 Recognize the commonality of human experiences across cultures	1	2	0	0	0	2	2	0	0	0	1	0	0	0	1	1	0	0	0	0	1	
4.5 Recognize the influence of diverse cultural perspectives on human thought and behavior	1	2	0	0	0	1	2	0	0	0	1	0	0	0	1	2	0	0	0	1	1	
5. Students are learning to use mathematics effectively when they:																						
5.1 Perform computations using appropriate methods	1	2	1	2	0	2	2	2	2	2	1	2	1	2	0	0	1	2	1	0	1	
5.2 Demonstrate knowledge and application of measurement	1	2	1	2	0	2	2	2	2	2	2	2	2	2	0	0	1	2	1	0	1	
5.3 Read, interpret, and generate graphical information	1	2	2	2	0	1	2	2	2	2	2	0	1	2	0	0	0	1	2	0	1	
5.4 Demonstrate knowledge and application of formulas	1	2	1	2	0	2	1	2	1	2	2	2	1	2	0	0	1	1	1	0	1	
5.5 Use critical thinking skills in a mathematical context	1	2	0	2	0	2	2	2	1	2	1	2	1	2	0	0	1	1	0	1	1	
6. Students are learning to use science and technology when they:																						
6.1 Use scientific principles appropriately in problem-solving and decision-making	1	2	1	0	0	2	1	0	0	2	2	2	2	2	0	0	1	2	1	2	1	
6.2 Apply the scientific method by organizing, analyzing, and interpreting data appropriately	1	2	1	0	0	2	2	0	0	1	2	2	1	1	1	1	0	2	1	2	1	
6.3 Use appropriate scientific equipment, methods, and safety precautions	1	2	1	0	0	2	2	0	0	2	0	2	2	2	0	0	1	1	2	1	1	
6.4 Describe the changing nature of and the interaction among science, technology, and society	1	2	0	0	0	1	2	0	0	1	2	0	1	0	0	1	0	2	0	2	1	
6.5 Use critical thinking skills to approach and use new technology	1	2	1	0	2	2	2	0	2	1	0	2	2	1	0	0	2	2	1	2	2	
6.6 Use appropriate technology to manage information, solve problems, communicate, develop products, and provide services	1	2	1	1	2	2	2	1	2	1	1	2	2	1	0	0	2	2	1	1	2	
7. Students are developing self-awareness when they:																						
7.1 Recognize their own self-worth, strengths and weaknesses, and potential for growth	1	2	0	0	2	2	2	0	0	0	1	2	1	0	2	0	2	2	0	2	2	
7.2 Recognize their own biases and values	1	2	0	0	2	2	2	0	0	0	1	2	1	0	2	2	1	1	0	2	2	
7.3 Demonstrate the ability to give and receive constructive feedback	1	2	0	0	2	2	2	0	0	0	1	1	2	0	2	1	1	1	0	2	2	
7.4 Develop time and stress management skills	1	2	1	0	1	1	2	0	0	0	0	1	2	0	2	0	2	2	1	2	2	
7.5 Set goals and devise strategies for educational, personal, and professional development in a changing world, consistent with their abilities and circumstances	1	2	0	0	1	2	2	0	0	0	0	1	1	0	1	0	1	0	0	2	2	
8. Students are learning effective social interaction when they:																						
8.1 Behave appropriately in a variety of situations, circumstances, and roles	1	2	0	1	1	2	2	1	1	1	1	2	2	1	2	1	2	2	0	2	2	
8.2 Work effectively in pairs and small and large groups	1	2	0	1	1	2	2	1	0	1	1	2	2	1	2	1	2	2	0	2	2	
8.3 Demonstrate awareness of and respect for differences	1	2	0	1	1	1	2	1	0	0	1	2	1	0	2	1	1	1	0	2	1	
8.4 Recognize conflict and use conflict resolution skills when appropriate	1	2	0	0	1	1	2	0	0	0	1	2	1	0	2	0	1	1	0	2	1	

REVISED 4/18/97

REVISED 4/18/97

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The Institutional Core Abilities Outcomes Matrix

This matrix will help us identify where the eight institutional core abilities are being taught within the context of general education and program courses. It will direct our attention to gaps, and help us coordinate curriculum to meet the needs of our students.

We intend to pilot the matrix with select programs during 1996-1997. So, we are interested in your questions and feedback. If you are interested in trying-out the matrix, it can be completed by listing the program courses or courses you teach along the top of the horizontal axis. Please include course numbers.

For each course, mark the degree of emphasis you place on each of the listed abilities, located on the far left. These abilities fall under broader categories, listed in italics.

Please use the following scale when deciding the emphasis (only one emphasis can be chosen):

2 - Major Emphasis
1 - Minor Emphasis
0 - No Emphasis

There is a Major Emphasis if BOTH of the following are true about the core ability indicator:

- It is documented by competencies/objectives in your *CURRENT* course outline, and
- It is assessed with multiple and/or varied assessments

There is a Minor Emphasis if the core ability indicator is assessed in at least one way and ONE of the following is true:

- It is documented as a secondary objective, or
- It exists, but is not explicitly documented in objectives

There is No Emphasis if an indicator is covered incidentally or not at all

Flow of Information

*For courses where **only one instructor** teaches a specific course:*

Individual instructor reflection and completion of Course Analysis Form

Course Analysis Form is merged into Program Analysis Form (Institutional Effectiveness Office)

Program Analysis Form is reviewed to
- determine gaps
- decide how gaps will be addressed
- coordinate dialogue on how curriculum is adjusted

(Program and Arts & Sciences faculty)

*For courses where **more than one instructor** teaches a specific course (participants may skip the first block and go directly to the second block if they so desire):*

Individual instructor reflection and completion of Course Analysis Form (optional)

Team of instructors who teach same course reach consensus and complete final Course Analysis Form

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Core Ability Assessment Process
Six Levels of Program Activity

Level/Activity	*Purpose*	*Who Responsible*	*Materials*	*When*
I. Introduction to Core Abilities	Fill out Course Analysis Form(s)	•AIT member •Core Ability Liaison	•Course Outlines •Program Analysis Form •Course Analysis Form •Presentation Materials	•Curriculum Days (Fall)
II. Reaching Consensus	Reach consensus on Course Analysis Form information	•AIT member •Core Ability Liaison	•Course Analysis Forms •Program Analysis Form •Course Outlines	•Day(s) set by program
III. Mapping Development	Consensus Course Analysis Forms are collected	•Core Ability Liaison collects •IE staff map	•Program Analysis Form •Course Analysis Forms	•After reaching consensus
IV. Program Review and Modification (Map analysis)	To determine if map is what faculty intended	•Program and Arts & Sciences faculty teaching courses	•Program Analysis Form •Course Analysis Forms •Course Outlines	•Curriculum Days (Spring) •Objectives Day (Spring)
V. Curriculum Modifications (supported through staff development offerings, recertification credits, IEI grant)	To modify any changes to Course Analysis Form, Program Analysis Form, and Course Outlines made in Level IV	•Program and Arts & Sciences faculty teaching courses make modifications •IE staff re-map Program Analysis Form	•Program Analysis Form •Course Analysis Forms •Course Outlines	•Continual process set by program
VI. Assessment of Student Learning Outcomes in Core Abilities	To assess and verify impact on student learning	•Students •Faculty •Employers •Administration •Others	•Formative and summative assessments at course, program, and institutional levels	•Continual process as set by faculty and program evaluation requirements

AIT = Assessment Implementation Team IE = Institutional Effectiveness IEI = Instructional Excellence Initiative

Lessons Learned Along the Way While Implementing MATC's Core Ability Assessment Plan

- ☞ Identify genuine work and service to be performed by the core ability assessment committee/team.
- ☞ Translate the core ability work into clear objectives and timeline that can be communicated to the committee/team and institution.
- ☞ Obtain administrative, faculty, and staff support for elements that lead to effective group process:
    - Time for members of the group to reflect, define, and personalize their charge
    - Time for members to establish a collaborative relationship
    - Autonomy, freedom, and trust that the process and products will be produced to accomplish the objectives charged to the committee
    - Respect and value for the expertise each member brings to the table
    - Availability and use of outside experts for knowledge not represented in the group
    - Clerical support for all the activities of the committee/team
    - Serious and quick response to the committee's need for information, production of documents, and institutional support
    - Opportunity for all members to speak and contribute in a safe and supportive group environment
    - Opportunity for the momentum of the assessment work to build within the group and then move to other areas of the institution
- ☞ Establish and reinforce the expectation that individual members and the group as a whole will accomplish their assigned core ability tasks.
- ☞ Encourage a "mini laboratory environment" for members to pilot core ability procedures and practices before promoting them across the institution.
- ☞ Identify and respond to short-term and long-term core ability tasks that need to be accomplished.
- ☞ Document assessment processes and practices into products for application and dissemination.
- ☞ Identify a communication/dissemination plan that builds on each member's role, expertise, and networks.
- ☞ Conduct formative and summative evaluations of the committee's/team's work in terms of established objectives.

Fall 1996

Five-Year Core Abilities
Phase-in Timetable

Number of Programs Phased-in	Year Programs Phased-in
6 (pilot) programs	1996-1997
10 programs	1997-1998
10 programs	1998-1999
10 programs	1999-2000
Evaluate Assessment Plan	2000
Begin Self-Study	2000
Continue Phase-in: 10 programs	2000-2001
11 programs	2001-2002
Total 57 programs	2002
NCA Visit	2002